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# USSOCOM Rotor Wing Aviation Support: The Role of the USMC

by

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## Abstract

As discussed in the 2010 Quadrennial Defense Review (QDR), American forces depend heavily upon rotor wing aviation. Nowhere is the dependence on rotor wing aviation more evident than for Special Operations Forces (SOF). Recent events have shown a shortfall of appropriate aviation support for forward deployed SOF forces. The question at hand is therefore, "Can and should the USMC assault support fill that gap?"

As discussed in the 2010 Quadrennial Defense Review (QDR), American forces conducting unconventional warfare (UW), irregular warfare (IW) and Counter Insurgency (COIN) operations depend heavily upon rotor wing (RW) aviation. One needs to look no further than Afghanistan to substantiate this statement. Nowhere is the dependence on rotor wing aviation more evident than for Special Operations Forces (SOF). Increased need for "low density high demand" forces has put increased pressure on our SOF forces. The recent commitment to increase SOF personnel for additional Operational Detachment Alpha (ODA) teams, more SEAL platoons and even the genesis of Marine Special Operations Command (MARSOC) has made this increasingly apparent. Ground SOF has grown while aviation SOF relatively has not. There is now a confluence of shortfalls in Special Operations Force (SOF) aviation[1] with a marked increase in ground SOF. The US Navy's deployment of HS-15, a non-United States Special Operations Command (USSOCOM) asset, in March of 2009 to support Naval Special Warfare outside of Bagdad in an admittedly "unconventional, land-based deployment"[2] substantiated this statement. This was a far cry, from their traditional role of anti-submarine warfare (ASW) and carrier based search and rescue (SAR). Additionally, the 160th Special Operations Aviation Regiment (SOAR) in a deficient response to this situation has managed to add only a single company of MH-47Gs.[3] The starting point for this discussion is therefore to acknowledge there is not enough RW aviation for SOF units.

It is time to start thinking differently about United States Marine Corps (USMC) assault support (AS) aviation. Four reasons outline why USMC RW and now tilt rotor (TR) aviation will answer the deficit in SOF aviation. First, USMC assault support aviation has shown numerous times that it conducts extremely complex high-risk special operations aviation missions. Many times these missions have been in concert with other SOF assets or while serving in the capacity

of a SOF asset. Second, due to enduring commitments in countries such as Afghanistan, Djibouti, or being forward deployed as part of a Marine Expeditionary Units (MEU), USMC AS exhibits the omnipresent theater availability USSOCOM requires. Third, USMC AS squadrons are trained to accomplish an unparalleled variety of mission profiles. Nearly all of the aviation mission sets with requisite tactics, techniques and procedures (TTPs) required of aviation by SOF forces are already present within USMC squadrons. Fourth, the flagship institution of AS TTPs, Marine Aviation Weapons and Tactics Squadron 1 (MAWTS-1) enables the USMC to create an unequaled level of standardization across the fleet while also developing and disseminating all of the latest TTPs through its Weapons and Tactics Instructor (WTI) program.

USMC aviation has routinely supported SOF activities from the inception of USSOCOM through Operation Iraqi Freedom (OIF) in a manner that far exceeds the capabilities of other conventional aviation units. Three historical examples espouse the SOF capability of USMC assault support. The first example is Operation Eastern Exit, which took place in Mogadishu, Somalia January 1991. An excerpt from the official recount is as follows, "The military operation itself might seem more like a Hollywood script than reality. Little over two days after leaving the North Arabian Sea, USS *Trenton* launched two CH-53Es with a 60-man combined SEAL and Marine evacuation force. The launch occurred in the middle of the night, over 450 miles from Mogadishu. En route, the two helicopters conducted two nighttime aerial refuelings (though none of the pilots had exercised this for over six months). On arrival off the coast, the two CH-53Es descended to 25 feet and sped over the city, landing in the Embassy compound even as looters were at its walls."[4] The accolades of the operation "included the evacuation of 281 people from over 30 nations, including 12 heads of diplomatic missions and 39 Soviet

citizens from amidst a bloody civil war."[5] This was a perfect example of USMC AS acting in a manner analogous to SOF aviation while also supporting USSOCOM assets.

The second example is the 1995 rescue of Capt Scott O'Grady. During this mission, USMC AS performed an extremely intricate Joint Personnel Recovery (PR) in a high threat environment. Although not a SOF mission per se, SOF forces are routinely tasked with PR for both clandestine and combat search and rescue (CSAR) modalities. All of the TTPs necessary for properly conducting PR in an environment such as Bosnia in 1995 have direct application to SOF aviation support. In an indication of this, Air Force Special Operations Command (AFSOC) aircraft including MH-53 PAVE LOW aircraft operating out of Italy offered a significant portion of the helicopter support for the PR mission in the Balkans.[6] Yet, in the case of Basher 52, the Marines received the execute order. There were two reasons for this. First, USMC assets were located just off the coast in the Adriatic. This meant response times for execution were far less than other PR assets. Second, due to the overt nature of the threat, the USMC PR option for tactical retrieval of aircraft and personnel (TRAP) was considered a more prudent choice. The PR of Scott O'Grady was likely to be contested and the TRAP TTP employed a "raid force" construct of a reinforced infantry platoon with integrated close air support. The thought being that if a firefight were to start the Marines would not be outgunned… at least for a little while.

The third historical example is Operation Enduring Freedom Afghanistan (OEF-A). OEF-A highlighted the flexibility of USMC AS for SOF by employing techniques ranging from aerial refueling and logistic support to direct action and close air support (CAS). During the opening stages of OEF-A USMC CH-53Es flew direct support (DS) operations for TF K-Bar. TF K-Bar was in fact a combined joint special operations task force (CJSOTF) which consisted of a litany of SOF forces from Australia, New Zealand, Germany, Denmark, Canada and the US.[7] The

USMC AS for TF K-Bar included logistical support, reconnaissance insertion and in the case 23 January 2002, direct action insertion of A/1/5th SFG (A).[8] Later during the SOF-led Operation Anaconda, USMC AS fulfilled an emergency request for helicopter CAS and heavy lift support by supplying three CH-53Es and five AH-1Ws by way of self-deployment from ships 700 miles away in the Indian Ocean. This was amazingly accomplished within 40 hours after mission receipt.[9] Ultimately, AH-1Ws employing appropriate "running attack" CAS TTPs became a deciding factor in turning the tide for the initially beleaguered American forces. The AH-1W CAS was greatly enhanced by the CH-53Es conducting forward area refueling and arming points (FARPs) by retrieving fuel from orbiting USMC KC-130s through aerial refueling (AR) and logistical runs to Bagram for additional ammunition.[10]

In all the historical examples given for this discussion, the fact that the USMC assets were "already there" played significantly into the decision for their use. The forward deployed, omnipresent theater availability of USMC AS was paramount in their success. From the Adriatic to the North Arabian Sea and Indian Ocean, USMC AS was ready and waiting. The omnipresent nature of Marine aviation will remain an enduring aspect of its identity as long as Marines remain at the forefront of expeditionary operations. It goes without saying how invaluable this characteristic in aviation is for USSOCOM.

Although Marine Corps Warfighting Publication (MCWP) 3-24 outlines the functions of USMC AS, it is not entirely germane to this discussion because it lacks necessary scope and fidelity. One can only get a true appreciation USMC AS mission sets by examining the training and readiness (T&R) manuals for the individual airframes. There one will find a breadth of profiles and capabilities that arguably exceed even that of the 160th SOAR. This includes T&Rs from the UH-1N/Y, AH-1W, CH-46E, CH-53D/E, MV-22B and KC-130J. A cursory look at the

UH-1Y, CH-53E and MV-22B is all that is necessary as these airframes are similar type model series (T/M/S) aircraft to those within SOCOM including the MH-60K, MH-47G and CV-22.

Mission tasks for USMC aviation within the T&Rs are spelled out as unified joint task list (UJTL) line numbers. Examples of such include conduct CAS, conduct interdiction, and conduct joint PR. Anecdotally it important to note that within the UJTL "Conduct amphibious assault and raid operations" the primary sub-task is "Conduct assault support for maritime special operations."[11] Meaning, in addition to traditional Marine Air Ground Task Force (MAGTF) support, USMC AS squadrons are doctrinally directed to conduct training in order to support maritime SOF.

Beyond these rudimentary doctrinal discussions, it is the mission sets and TTPs encompassed within the T&Rs that truly characterize USMC assault support as being akin to other SOF aviation. These "sets" include but are not limited to: shipboard operations, direct action, RW escort, CAS, offensive air support (OAS), strike coordination and reconnaissance (SCAR), forward air controller airborne (FAC(A)), suppression of enemy air support (SEAD), TRAP, paradrops, aerial delivery, fast rope, special insertion and extraction (SPIE) rig, helocast, FARP, AR, long-range raid, sling loads, battlefield illumination, and casualty evacuation (CASEVAC).[12] All of this day or night in any illumination level from mountainous to urban terrain. This is not just a manifesto of what is possible. Rather, the T&Rs are an outline of what is trained for with specific performance standards. These capabilities far exceed what is nominally considered conventional.

These mission sets are most proficient in units that have recently prepared for a MEU deployments yet they are present in all AS squadrons. At this juncture, it is important to note a point of departure. Certain SOF platforms most notably the MH-47G and the CV-22 have far

greater capability within the "adverse weather" and mission "situational awareness" realm than USMC aircraft. This is acknowledged and will be discussed later in a section outlining these and other USMC shortfalls. That being said, only the 160th SOAR has an equivalent breadth of mission sets. However, it is argued that their responsibilities are not nearly as broad. This span of mission sets certainly exceeds that of AFSOC and HSC-84 (non-USSOCOM USN NAVSOC Direct Support). As a point of historical comparison, USMC AS far exceeds the capability of the introductory example HS-15. These are obviously grandiose generalities. However, the take home point is that USMC AS already trains for the preponderance of mission sets and TTPs required to support SOF.

One question undergirds this discussion. It happens to be one for which USMC AS is completely prepared. How can USMC assault support, or for that matter any aviation designated to support SOF maintain the requisite high level of standardization and readiness from unit to unit? This is of paramount importance within SOF for reasons ranging from global projection and planning assumptions to overall combat effectiveness. Traditional SOF aviation such as the 160th SOAR and the 8th SOS enjoy the luxury of being small units, and therefore standardization and readiness are predominantly a byproduct of unit professionalism. However, the USMC does not have the same luxury having significantly more aviation assets and for that matter aircrews.

As mentioned previously, the entity that standardizes USMC aviation and helps to ensure unit preparedness is Marine Weapons and Tactics Squadron 1 (MAWTS-1). Twice a year MAWTS-1 convenes its Weapons and Tactics Instructor (WTI) class to, "provide standardized advanced tactical training and certification of unit instructor qualifications that support Marine Aviation Training and Readiness."[13] The end state is a group of USMC pilots and aircrew that are highly trained, risk mitigating, fully standardized subject matter experts (SME) thoroughly

tempered in real world scenarios infused with the latest in TTPs. Every USMC squadron has several of these individuals. Furthermore, WTIs through MAWTS-1, "Maintain liaison with U.S. Navy, U.S. Air Force, U.S. Army, Special Operations Command, and other military or technical organizations, including foreign services, to ensure that aviation tactics and courses of instruction are current and appropriate."[14] Because of this, USMC AS can and routinely does, play "pick-up" with other aviation units across the Corps. With little or no preparatory time, USMC aviation can be amalgamated anywhere in the world with the resultant being the execution of extremely difficult and complex missions that are ideally suited for MAGTF as well SOF operations. Beyond the professionalism and can-do attitude of the Marines, the aviation T&R program and WTIs are what makes this possible. This construct is ideally suited for guaranteeing that USMC aviation can in fact support SOF operations as dictated within the UJTLs across the globe.

At this point, it is not a question of whether or not USMC aviation will support SOF forces. Historical precedence has shown that it will. With more SOF forces, increased global tempo, time sensitive missions and a litany of other factors USMC AS will be called upon with increasing frequency to support US and coalition SOF. This will be especially evident in scenarios involving MARSOC forces imbedded within MEUs and Amphibious Ready Groups (ARG). Additionally in a parallel yet divergent discussion, regular Marine units such as MEU battalion landing teams (BLTs) increasingly have required SOF-like aviation support identical to the types being discussed. The question remains, what shortfalls could obstruct USMC AS from adequately supporting SOF assets, which in turn would result in mission failure?

Experience, training, mission sets, readiness and standardization are clearly not shortfalls. Obviously, units can always benefit from more training as SOF aviation excels in this. The axiom that a gallon of sweat in training is infinitely better than an ounce of blood in combat

rings universally true. However, USMC shortfalls mostly revolve around the capability of the Marine airframes themselves. The airframes including UH-1Y, CH-53E and MV-22B have aerodynamic performance capabilities that are very comparable to their SOF counterparts. Airframes both SOF and USMC have certain advantages and disadvantages to each other in particular regimes. Yet overall, theses differences are negligible. However, there are acute shortages in technology that could mean the difference between go/no-go, mission accomplishment and most importantly risk mitigation. Building entirely new SOF aircraft is not being proposed nor is it practical. Rather, modifying USMC aircraft with three off the shelf SOF developed technologies will vastly increase USMC capability for SOF, while also greatly mitigating risk inherit in all military aviation operations.

First, SOF aviation innately posses what is referred to as enhanced "adverse weather" capability. Both the MH-47G[15] and CV-22[16] excel in this category. This is most notably due to very capable avionics including Global Positioning System (GPS)/ Inertial Guidance Systems (INS), Terrain Following (TF)/ Terrain Avoidance (TA) radar and integrated digital mapping software. Every USMC assault support aircraft has notable shortfalls in at least one of these categories as compared to SOF aircraft. Although all USMC AS purport an "all weather" capability, it is in all actuality a misleading and erroneous statement. "All weather" insinuates that the platform can be expected to accomplish its mission with reasonable certainty in "all weather" situations minus extreme phenomena. Without delving into details, as it is a research project unto itself, USMC AS aircraft most certainly do not have an all weather capability analogous to a tactical instrument meteorological conditions (IMC) capability. This is ironic in that it was the Navy and USMC that developed the first true "all weather" platform the A-6

Intruder. The A-6 could actually perform its mission in adverse weather conditions unlike contemporary USMC AS platforms.

In the absence of this capability, USMC AS aircraft (not including KC-130Js) are incapable of tactically operating in weather conditions described as slightly below marginal lest incur an undue amount  risk. One simple example is light rain during nighttime operations. Formation flying during the night with precipitation while utilizing night vision goggles (NVGs) and or forward looking Infrared (FLIR) for flight integrity and navigation is simply impractical. To elaborate, in these conditions USMC aircraft cannot be expected to navigate entirely by GPS at low altitudes, negating line of sight navigation including traditional radio navigation and at times GPS without the redundancy of TF/TA radar, integrated digital mapping and INS. This capability has obvious tactical applications as well which would greatly enhance survivability. Other atmospheric phenomena such as dust have proven to have even more severe effects in desert environments due to low observed visibility and atmospheric turbulence.

There are startling examples where this lack in adverse weather capability has had disastrous results in recent USMC history. March 20, 2003 a CH-46E crashed killing four US Marines and eight Royal Marines from 42 Commando. This was during the mission to capture the Al-Faw peninsula during the beginning stages of Operation Iraqi Freedom (OIF). This mishap was linked to a litany of factors. However, pilot disorientation[17] due to dust and lack of navigational cuing can be “open source” cited. Archaic navigational systems certainly did very little to help mitigate both meteorological conditions and or cockpit human factors. January 26, 2005 a CH-53E crashed killing 30 Marines and Sailors in Al Anbar, Iraq. Again, dust and lack of navigational cuing contributed immeasurably to this mishap. The point being, meteorological conditions were such that contemporary military avionics would have greatly reduced the

probability of this event from even occurring. Although this mission was in general support of Multi-National Force West (MNF-W), SOF support would have very likely been attempted in the same weather scenarios. In both cases, an inability or unwillingness to install appropriate avionics equipment for the mission attempted was a fatal flaw.

Under experienced skeptics quickly point to pilot error in these examples. It is insatiably easy to say that a pilot's decision to modify or abort the mission up until the time of the mishap would have prevented these tragedies. This is a universal truth. What is equally true is that the off-the-shelf technologies discussed would have been indisputable risk reducing agents. From a monetary standpoint, the cost for said upgrades would have been well worth the investment when considering the military capability sacrificed through the aforementioned mishaps. SOF missions are invariably high priority and high risk. Mission launch criterion habitually include higher threats and worse weather. This means, situations similar to those described above will occur with increasing frequency as a proportion to the amount of SOF support provided. Ultimately, equipping the war fighter, in this case the aircrews, with the appropriate equipment will be the greatest mitigating factor. This is a point that is clearly acknowledged by AFSOC and US Army SOF aviation, as evident in the avionics suites in the CV-22 and MH-47G, yet eludes most of USMC AS aviation

Long-range communications have also been a habitual shortfall in USMC AS. The lessons learned from both OIF and OEF are replete with requests for long-range communication solutions. The need for this is so interminably obvious that it is astounding that it has not been previously rectified. It is true, that the MV-22B and UH-1Y have SATCOM capability.[18] However, what is truly needed are redundant interoperable long-range communications incorporated into the preponderance of USMC AS that include SATCOM and HF for voice and

data capabilities. Global location, atmospheric conditions, emission control (EMCON) conditions, joint/collation capabilities among other factors will likely dictate which modality is used and why. Suffice to say the more options available the better. Equally vital is the need for secure communications capability on all said modalities.

Finally, there is an inherit need to install survivor locator/interrogator equipment like the kind which interacts with survival radios such as the Hook 112B and the CSEL. Again, although PR is not a SOF mission per se, SOF assets including Pararescumen (PJs) routinely perform it. PR will undoubtedly be assigned to USMC AS in the future as it had in the Balkans. Furthermore, it will likely be in a joint CSAR interaction similar to that of USAF PJs, USAF HC-130s, and USMC CH-53Es residing in Camp Lemonier, Djibouti.[19] As such, USMC assets have an essential need to be able to communicate with and locate isolated personnel in a fashion similarly provided to aircraft such as the MH-47G[20] and CV-22[21] and MH-60G.

In conclusion, USMC assault support has performed admirably when supporting SOF or performing PR in the past. However, the emerging environment will inevitably require more support from USMC aviation. The Corps already has the hard part figured out regarding the readiness, TTPs and mission sets to perform that "multitude" of missions in support SOF as well as the MAGTF. Beyond this, the Corps needs to embrace this responsibly and opportunity. It must make the necessary strides in technology and acquisition that will ensure that "wide breadth" of mission capabilities can be capitalized on when required. A USMC AS capabilities roadmap similar to the aircraft survivability equipment (ASE) roadmap in the USMC Aviation Plan[22] is desperately needed. Capabilities such as those discussed need to be included so that the USMC AS can be organizationally equipped for the missions it will inevitably directed to perform. In the end, what matters most is mission accomplishment. America's SOF operators

must have the aviation support they require in order to perform their mission in the most effective and safe manner possible.

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[14] Ibid., 6.

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